

Claims

1. Electroluminescent (EL) lamp driver for controlling the luminescent brightness of at least two EL lamps (28, 38), comprising means for receiving at least two luminescent brightness setpoint values for said respective EL lamps and at least one charging means, characterized by control means for setting the luminescent brightness of the EL lamp with the highest luminescent brightness setpoint by controlling an output parameter of the charging means (10), and for setting the luminescent brightness of an EL lamp or the EL lamps with a lower luminescent brightness setpoint by controlling a time interval during which this EL lamp or these EL lamps is/are charged in parallel to the first EL lamp.
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2. EL lamp driver according to claim 1, wherein said control means comprises means for generating charge waveforms (128, 138) in accordance with the received setpoint values for charging or discharging the EL lamps (28, 38).
3. EL lamp driver according to claim 1 or 2, wherein said control means comprises means for generating a first charge waveform (128) for charging a first one of the EL lamps (28 or 38) with the highest desired luminescent brightness and a second charge waveform for charging a second EL lamp (38 or 28) with lower desired luminescent brightness.
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4. EL lamp driver according to claim 3, wherein the first charge waveform (128) fully charges the first one of the EL lamps (28 or 38) with the highest desired luminescent brightness and the second charge waveform has essentially the same waveform (138) as the first charge waveform (128) during a time interval which is smaller than the time interval during which the first one of the EL lamps is charged.
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- 25 5. EL lamp driver according to any one of claims 1 to 4, wherein said control means (40; 50, 55, 56, 60, 65, 66, 70-79, 91-94) is adapted to receive on its inputs the luminescent brightness setpoint values (41, 42) for at least two EL lamps (28, 38) and actual values (84, 85) corresponding to the actual luminescent brightness of the at least two EL lamps (28, 38), to compare

the respective setpoint value and actual value for each of the at least two lamps, and to drive charging means (10), discharging means (12), and H-bridges (20-23, 30-33) for the EL lamps (28, 38) in such a way that the set-point value and the actual value for each of the at least two EL lamps (28, 38) are substantially equal.

- 5 6. EL lamp driver according to any one of claims 1 to 5, wherein said control means comprises a controller (50, 60) for each of the at least two EL lamps (28, 38), wherein each controller (50, 60) receives on its inputs (57, 58, 67, 68) the setpoint value and the actual value of a corresponding one of the at least two EL lamps (28, 38) and is adapted to generate a control signal (59, 69) on its output for controlling the charging and discharging means (10, 12) or a pulse-width modulator (72) for generating a control signal (83) for controlling the charging or discharging of the EL lamp or lamps with the lower luminescent brightness setpoint or setpoints.
- 10 15 7. EL lamp driver according to any one of claims 1 to 6, wherein the charging means (10) comprise a high voltage power supply which is able to source current into the EL lamps (28, 38).
- 15 8. EL lamp driver according to claim 7, wherein the power supply is a step-up switching power supply with a control input for setting the duty cycle on the primary side switching.
- 20 9. EL lamp driver according to any one of claims 1 to 8, wherein the discharging means (12) comprise a control input for determining the amount of sink current.
- 25 10. EL lamp driver according to claim 9, wherein the discharging means (12) comprises a resistor, a current sink based on a transistor, or a step-down switching power supply with a charge storage device on the primary side for absorbing energy removed from the EL lamp or lamps.
- 30 11. EL lamp driver according to any one of the preceding claims, wherein said output parameter comprises an output voltage and/or an output current of said charging device